



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,371	10/20/2003	Pengfei Ma	02-560	2853

719 7590 08/09/2005

CATERPILLAR INC.  
100 N.E. ADAMS STREET  
PATENT DEPT.  
PEORIA, IL 616296490

EXAMINER

LOPEZ, FRANK D

ART UNIT

PAPER NUMBER

3745

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/689,371	Applicant(s) MA ET AL. <span style="float: right;">C</span>	
	Examiner F. Daniel Lopez	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/20/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/20/03, 12/6/04</u> . | 6) <input type="checkbox"/> Other: ____  |

### ***Drawing***

The drawings are objected to because in fig 4, the fluid flow-biasing device (212) appears to be drawn as a fluid actuator, but is connected to a line (402) carrying an electric signal, and therefore is confusing. Is the fluid flow-biasing device of fig 4 supposed to be an electric actuator or a fluid actuator?

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

Claims 10-15 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 10 last line "a fluid flow-control apparatus" should be —said fluid flow-control apparatus— or —the fluid flow-control apparatus—, since it refers back to the fluid flow-control apparatus of line 2.

Claims not specifically mentioned are indefinite, since they depend from one of the above claims.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. § 102(b) as being anticipated by Tanaka et al. Tanaka et al discloses a plurality of motors (4) and a flow compensation device (13) coupled to a directional flow device (12), with a fluid flow biasing device (13x, 13y, 13d) coupled to the flow compensation device. The swing system of claims 1 and 2 is in the preamble only and considered intended use, and therefore is given no patentable weight.

Claims 10-15 are rejected under 35 U.S.C. § 102(b) as being anticipated by either Kajita et al or Arai et al (see discussions below).

The fluid flow-biasing device (e.g. claim 1 line 8) of the claims is broadly understood to be an element which biases the flow compensation device.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1-8 are rejected under 35 U.S.C. § 103 as being unpatentable over Kajita et al in view of Lech et al. Kajita et al discloses a fluid flow control apparatus for a

Art Unit: 3745

backhoe (fig 7) comprising a motor (23) of a swing system and a flow compensation device (35) coupled to a directional flow device (29), with a fluid flow biasing device (130, fig 23) including an actuator (132, 35a, 35b) coupled to a flow metering member of the flow compensation device; wherein a fluid pressure (e.g. via 43a) of the swing system is in communication with the actuator (35a, 35b), or the actuator (132) is coupled (via 51d) to a control device (62); wherein a load pressure sensor (e.g. 59) is coupled to the control device; but does not disclose that the swing system includes a plurality of motors.

Lech et al teaches, for a fluid flow control apparatus for a backhoe (fig 1) comprising a motor (46) of a swing system; that the swing system includes two motors (70, 72).

Since the backhoes of Kajita et al and Lech et al are functionally equivalent in the backhoe art; it would have been obvious at the time the invention was made to one having ordinary skill in the art to use the control system of Kajita et al to control a backhoe having a swing system which includes two motors, as taught by Lech et al, as a matter of engineering expediency.

Claims 1-7 and 9 are rejected under 35 U.S.C. § 103 as being unpatentable over Arai et al in view of Morishita (5,513,551). Arai et al discloses a fluid flow control apparatus for an excavator (column 1 line 5-6) comprising a motor (3) of a swing system and a flow compensation device (10) coupled to a directional flow device (8), with a fluid flow biasing device (connected to either Pi3 or 13) including an actuator coupled to a flow metering member of the flow compensation device; wherein a fluid pressure (via line to 13) of the swing system is in communication with the actuator, or the actuator is coupled (via Pi3) to a control device (14); wherein a pressure sensor (e.g. generating Ps1) is coupled to the control device; wherein the signals to the flow compensation device control the flow rate to the swing motor (e.g. column 2 line 2-6); but does not disclose that the swing system includes a plurality of motors, or that the sensor is a swing angle sensor.

Art Unit: 3745

Morishita (5,513,551) teaches, for a fluid flow control apparatus for an excavator including a backhoe (7, fig 1) comprising a motor of a swing system connected to a directional control valve; wherein a control device (27) is connected to a sensor (30) and controls flow to the swing motor; that the swing system includes two motors (9, 10); and that the sensor is a swing angle sensor, for the purpose of allowing the control device to slow down the swing motors when the swing motors near a limit position.

Since the excavators of Arai et al and Morishita (5,513,551) are functionally equivalent in the backhoe art; it would have been obvious at the time the invention was made to one having ordinary skill in the art to use the control system of Arai et al to control a backhoe having a swing system which includes two motors, as taught by Morishita (5,513,551), as a matter of engineering expediency; and to make the sensor of Arai et al a swing angle sensor, as taught by Morishita (5,513,551), for the purpose of allowing the control device to slow down the swing motors when the swing motors near a limit position.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bowden refers to a directional control valve (110) connected with a fluid flow-control apparatus (176) with a fluid flow-biasing device (166).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is 571-272-4821. The examiner can normally be reached on Monday-Thursday from 6:15 AM -3:45 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on 571-272-4820. The fax number for this group is 571-273-8300. Any inquiry of a general nature should be directed to the Help Desk, whose telephone number is 1-800-PTO-9199.



F. Daniel Lopez  
Primary Examiner  
Art Unit 3745  
August 5, 2005